What is claimed is:

1. A method of assessing the effectiveness of non-nucleoside reverse transcriptase antiretroviral therapy of an HIV-infected patient comprising:
   (a) collecting a plasma sample from the HIV-infected patient; and
   (b) evaluating whether the plasma sample contains nucleic acid encoding HIV integrase having a mutation at codon 66;
   in which the presence of the mutation correlates with an increased susceptibility to delavirdine, nevirapine, and efavirenz.

2. The method of claim 1, wherein the mutation at codon 66 codes for isoleucine (I).

3. The method of claim 1, wherein the mutation at codon 66 is a substitution of isoleucine (I) for threonine(T).

4. The method of claim 1, wherein the HIV-infected patient is being treated with an antiretroviral agent.

5. A method of assessing the effectiveness of antiretroviral therapy of an HIV-infected patient comprising:
   (a) collecting a biological sample from an HIV-infected patient; and
   (b) evaluating whether the biological sample comprises nucleic acid encoding HIV integrase having a mutation at codon 66;
   in which the presence of the mutation correlates with a decreased susceptibility to integrase inhibitor L-731,988.

6. The method of claim 1, wherein the mutation at codon 66 codes for isoleucine (I).

7. The method of claim 1, wherein the mutation at codon 66 is a substitution of isoleucine (I) for threonine(T).

8. The method of claim 5, wherein the HIV-infected patient is being treated with an antiretroviral agent.

9. The method of claim 5, wherein the presence of the mutation further correlates with an increased susceptibility to delavirdine, nevirapine, and efavirenz.

10. A method for assessing the biological effectiveness of a candidate HIV antiretroviral drug compound comprising:

(a) introducing a resistance test vector comprising a patient-derived segment further comprising nucleic acid encoding HIV integrase having a mutation at codon 66;

(b) culturing the host cell from step (a);

(c) measuring the indicator in a target host cell; and

(d) comparing the measurement of the indicator from step (c) with the measurement of the indicator measured when steps (a) - (c) are carried out in the absence of the candidate antiretroviral drug compound;

wherein a test concentration of the candidate antiretroviral drug compound is present at steps (a) - (c); at steps (b) - (c); or at step (c).

11. The method of claim 10, wherein the mutation at codon 66 codes for isoleucine (I).

12. The method of claim 10, wherein the mutation at codon 66 is a substitution of isoleucine (I) for threonine(T).

13. The method of claim 10, wherein the indicator is an indicator gene.

14. The method of claim 13, wherein the indicator gene is a nonfunctional indicator gene.

15. A resistance test vector comprising an HIV patient-derived segment further comprising nucleic acid encoding HIV integrase having a mutation at codon 66 and an indicator gene, wherein the expression of the indicator gene is dependent upon the patient derived-segment.

16. The resistance test vector of claim 15, wherein the patient-derived segment having a mutation at codon 66 codes for isoleucine (I).

17. The resistance test vector of claim 16, wherein the mutation at codon 66 is a substitution of isoleucine (I) for threonine(T).